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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,461	09/19/2003	John Paul Maye	61844(51035)	8336

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EXAMINER	
JOYNER, KEVIN	
ART UNIT	PAPER NUMBER
1744	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/666,461	MAYE, JOHN PAUL	
	Examiner	Art Unit	
	Kevin C. Joyner	1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-10,12-14 and 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-10, 12-14, and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. Claims 1 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barney et al. (U.S. Patent No. 5,455,038) in view of Millis et al. (U.S. Patent No. 5,286,506).

Barney discloses a method of using hop acids as an antimicrobial agent for a food processing facility (column 1, lines 15-25), comprising:

Utilizing hop acids in an amount to inhibit microbial organisms (column 1, lines 29-40); and delivering the hop acids to the food processing facility. More specifically, the brewing industry is a food processing facility as broadly defined, and it is known that the hop acids are delivered to the facility as such is the only reasonably known method of obtaining hop acids in a facility. Barney does not appear to disclose that the hop acids are mixed with a detergent or cleanser. Millis discloses a product and process for the inhibition of food pathogens by hop acids. The patent further discloses that the hop acids are delivered in a biodegradable (concerning claim 16) detergent (As broadly defined, NaOH (column 3, line 42) is a detergent). More specifically, applicant is reminded that the Examiner must take the broadest reasonable interpretations of the limitations in the claims and thus by the references given in the pertinent prior art in the conclusion of this action, examples are shown where NaOH is a detergent and biodegradable to an ordinarily skilled artisan. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the product and

process of Barney to deliver the hop acids in a detergent solution as shown by Millis. This would provide a safe sterile delivery of the hop acids to the food processing facility.

2. Claim 2, is rejected under 35 U.S.C. 103(a) as being unpatentable over Barney et al. (U.S. Patent No. 5,455, 038) in view of Millis et al. (U.S. Patent No. 5,286,506) as applied to claim 1 above, and further in view of Barney et al. (U.S. Patent No. 7,005,453).

Barney (U.S. Patent No. 5,455,038) in view of Millis is relied upon as set forth in reference to claim 1 above. Barney (U.S. Patent No. 5,455,038) further discloses that the microbial organisms are *Listeria monocytogenes* (column 2, line 59). Barney (U.S. Patent No. 5,455, 038) does not appear to disclose that the microbial organisms are also *Staphylococcus aureus*. U.S. Patent No. 7,005,453 discloses a method of using hop acids to inhibit the growth of microorganisms, in particularly *Staphylococcus aureus* (column 1, lines 20-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method and apparatus of utilizing hop acids as an antimicrobial agent of Barney et al. (U.S. Patent No. 5,455,038) in view of Millis in order to inhibit the growth of the microorganism *Staphylococcus aureus* as is a known contaminating bacteria as exemplified by U.S. Patent No. 7,005,453.

3. Claim 3, is rejected under 35 U.S.C. 103(a) as being unpatentable over Barney et al. (U.S. Patent No. 5,455, 038) in view of Millis et al. (U.S. Patent No. 5,286,506) as applied to claim 1 above, and further in view of Lutz et al. (U.S. Publication No. 2004/0091558).

Barney in view of Millis are relied upon as set forth in reference to claim 1, above. Barney in view of Millis does not appear to disclose that the hop acids are hexahydroisoalpha acids. Lutz discloses a method for inhibiting the growth of microbial organisms utilizing hop acids (paragraph 19). Lutz continues to disclose that the hop acids are mixed with a detergent or cleanser and that the hop acid is a hexadydro-iso-alpha acid (paragraphs 6-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize hexahydroisoalpha acids in the method and product of Barney in view of Millis in order to inhibit microorganism growth, as such is a known inhibitor and contained within hop extracts as shown by Lutz.

4. Claims 4, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barney et al. (U.S. Patent No. 5,455,038) in view of Lutz et al. (U.S. Publication No. 2004/0091558).

Barney discloses a method and apparatus of using hop acids as an antimicrobial agent (column 1, lines 16-18) in a food packaging material (column 2, lines 13-15), comprising: delivering the hop acids in a medium used in controlling microorganisms (column 3, lines 34-67), wherein the hop acids are mixed with the medium in an amount to inhibit microbial agents (column 1 lines 61-64). Barney does not appear to disclose that the hop acids are hexahydroisoalpha acids. Lutz discloses a method for inhibiting and controlling the growth of microbial organisms utilizing hop acids (paragraph 19). Lutz continues to disclose that the hop acids are mixed and incorporated with a detergent or cleanser and that the hop acid is a hexadydro-iso-alpha acid (paragraphs 6-15). Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to utilize hexahydroisoalpha acids in the method and product of Barney in order to inhibit microorganism growth, as such is a known inhibitor and contained within hop extracts as shown by Lutz.

5. Claims 6, 9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barney et al. (U.S. Patent No. 5,455,038) in view of Lutz et al. (U.S. Publication No. 2004/0091558) as applied to claims 4, 8, 12, and 13 above, and further in view of Barney et al. (U.S. Patent No. 7,005,453).

Barney (U.S. Patent No. 5,455,038) in view of Lutz is relied upon as set forth in reference to claims 4, 8, 12, and 13 above. Barney (U.S. Patent No. 5,455,038) further discloses that the microbial organisms are *Listeria monocytogenes* (column 2, line 59). Barney (U.S. Patent No. 5,455, 038) does not appear to disclose that the microbial organisms are also *Staphylococcus aureus*. U.S. Patent No. 7,005,453 discloses a method of using hop acids to inhibit the growth of microorganisms, in particularly *Staphylococcus aureus* (column 1, lines 20-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method and apparatus of utilizing hop acids as an antimicrobial agent of Barney et al. (U.S. Patent No. 5,455,038) in view of Lutz in order to inhibit the growth of the microorganism *Staphylococcus aureus* as is a known contaminating bacteria as exemplified by U.S. Patent No. 7,005,453.

6. Claims 7 and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable by Barney et al. (U.S. Patent No. 5,455, 038).

Barney is relied upon as set forth above. Barney does not specifically state that the food packaging material comprises a 2% by weight volume of a hop extract containing about 9% hexahydroisoalpha acids. However, it would have been well within the purview of one of ordinary skill in the art to optimize the weight volume and the percentage of hexahydroisioalpha acids in the packaging material in order to maximize the efficiency of the process as well as the inhibition of the microorganisms. Only the expected results would be attained.

Response to Arguments

7. Applicant's arguments with respect to claims 1-4, 6-14, and 16 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's arguments filed February 14, 2007 have been fully considered but they are not persuasive.

Applicants principle arguments are:

(a) Barney fails to describe methods of compositions fearturing hexahydroisoalpha acids as recited in Applicants' claims. Thus, Barney cannot destroy the novelty of Applicants' invention.

The applicants amendments to this limitation has necessistated a new grounds of rejection.

(b) Barrney fails to teach or suggest methods of using hop acids as an antimicrobial by delivering the hop acids to a food processing facility as recited in claim 1, from which claims 2 and 3 depend. The Examiner states, "Barney does not appear to

specifically state that the hop acids are used in a food processing facility." (Office action mailed October 10, 2006, page 5, lines 4 and 5)

The newly amended limitation for this claim has necessisitated a new grounds of rejection. More specifically, the previous limitation utilized the hop acids as a microbial agent for a food processing facility, wherein the hop acids were delivered for **use in controlling** microorganisms in a food processing facility, and not delivering hop acids to a food processing facility. As stated in the preivous rejection, the hop acids were added to food packaging materials to inhibit microorganisms. It is known that the food packaging materials are sent to food processing facilities to package the foods. The packaged materials with hop acids added to them would then control the microorganisms in the food processing facility. Therefore, the hop acids are delivered to an object **for use in controlling** microorganisms in a food processing facility.

(c) Barney emphasizes the desirability of using hexahydrocolupulone or tetrahydroisohumulone in foods because they are advantageously tasteless. Barney states, "One advantage of using hexahydrocolupulone is that it is no bitter in flavor and should have little organoleptic effect on foods (column 1, lines 48-50). In fact Barney defines the amount of hexahydrocolupulone or tetrahydroisohumulone to be used as an antimicrobial in terms of its flavor. At column 1, line 67, to column 2, line 3, Barney states:

> *Safe and effective amount" as used herein means an amount of the inhibitor which is enough to provide the desired inhibition, but* ***not so high as to cause undesirable other properties, such as an unacceptable taste****. The safe and*

effective amount will vary with the particular inhibitor chosen, and the ***taste or flavoring of the particular food*** *to which the inhibitor is to be added or which is to be wrapped in the packaging materials containing the inhibitor.*

By directing the skilled artisan toward the use of hexahydrocolupulone or tetrahydroisohumulone in food, Barney teaches away from Applicants' claimed methods, which require mixing hop acids with detergent or cleanser. Mixing hop acids with detergents or cleansers is inconsistent with the used described by Barney (e.g. the treatment of solid foods). In view of this teaching away, one of skill in the art would lack the requisite motivation to adapt the methods of Barney to arrive at Applicants' claimed methods.

The claimed invention does not recite the limitation of adding a tasteful or tasteless substance to the detergent. The claimed invention does not state that the hop acids nor the detergent effect the taste of the food in the food processing facility. Furthermore, Barney is not relied upon for mixing hop acids with a detergent. With respect to the Applicants' amended claims of the invention comprising delivering the hop acids to a food processing facility, these limitations have necessitated a new grounds of rejection.

(d) Millis fails to remedy the deficiencies of Barney. Like Barney, Millis discloses the use of hop acids to protect food from contamination with Listeria. In fact, Miller too state that the hop acids used for food preservation are advantageously tasteless. Millis states, "the beta acids are useful as a bacteriocide against a dangerous food pathogen (Listeria) at levels below that at which a noticeable flavor from the beta acids is

detectable (column 1, lines 42-45)." Thus, by directing the skilled artisan toward the use of hop acids as an antimicrobial agent in food, Millis teaches away from Applicants' claimed methods, which require mixing the hop acids with a detergent or cleanser.

As discussed above, Millis mixes the hop acids in a detergent (NaOH). The mere fact that both Barney, and Millis disclose that the hop acids are advantageously tasteless provides more motivation for their combination.

(e) The Examiner states, "The patent further discloses that the hop acids are delivered in a detergent (As broadly defined, NaOH (column 3, line 42) is a detergent." Applicants respectfully disagree. *As evidenced in attached Exhibits A and B ("Detergent," Britannica Concise Encyclopedia, http://www.answers.com/library/Britannica+Concise-cid-847613342; and "Surfactant," McGraw-Hill Encyclopedia of Science and Technology, 5th http://www.answers.corn/surfactants%2), one of skill in the art understands that detergents are amphiphiles that include a hydrophobic tail portion and a hydrophilic polar head group, which allows them to act as emulsifiers. Sodium hydroxide lacks these characteristics. Accordingly, one of skill in the art would not understand that sodium hydroxide is encompassed by the term "detergent."*

Applicant is reminded that the Examiner must take the broadest reasonable interpretations of the limitations in the claims. As referenced by Avnur et al. (U.S. Patent No. 6,201,109) sodium hydroxide is a detergent to an ordinary skilled artisan (column 6, line 54).

(f) Barney II describes method and compositions for inhibiting Listeria or Staphylococcus aureus in feminine hygiene products. Barney II fails to teach or suggest methods for delivering any hop acid in a detergent to a food processing facility.

Barney II is not relied upon to teach delivering a hop acid in a detergent to a food processing facility.

(g) *Claim 7 is rejected as allegedly obvious over Barney; claims 6, 9, and 14 are rejected as obvious over Barney in view of Barney II; and claims 5, 11, and 15 are rejected as obvious over Barney in view of Probasco. Each of the rejected claims now recites a food packaging material that incorporates a hexahydroisoalpha acid in an amount to inhibit a microbial organism. Barney and Barney II fail to teach or suggest compositions or methods featuring the use of hexahydroisoalpha acids in food packaging as acknowledged by the Examiner at page 7, lines 13 and 14.*
The Examiner seeks to remedy the deficiencies of Barney and Barney II by citing Probasco. Regarding Probasco, the Examiner states:

> *Probasco discloses a method and apparatus for making pesticides from hop extracts. The publication states that hop acids including hexahydroisoalpha acids are used to inhibit microorganisms (as broadly interpreted* ***a pesticide is a microorganism)*** *and are used in the food industry. (Emphasis added; citations omitted.) (Office action mailed October 10, 2006, page 7, lines 15-18)*

Applicants respectfully disagree. Pesticides are typically used to control garden pests, such as insects and spiders as evidenced in Probasco. At paragraph 2, lines 1-3, Probasco states, "Chemical pesticides are used in commercial agriculture, home gardening, residential use, and similar applications for the purpose of controlling ***insects and spiders****." (Emphasis added.) One of skill in the art would not interpret or understand the term "pesticide" to encompass compositions for the control of microorganisms. Thus, Probasco fails to remedy the deficiencies of the other cited references.*

In sum, none of the references cited by the Examiner, alone or in any combination, teaches or suggests methods of delivering hop acids to a food processing facility or food packaging materials that incorporate hexahydroisoalpha acids and methods of making and using such materials. The references cited by the Examiner fail to provide the requisite motivation to combine; fail to provide a reasonable expectation of success; and fail to teach or suggest all of Applicants' claim limitations. Accordingly, Applicants respectfully submit a prima facie case for obviousness is not established and request that the obviousness rejection of the claims be withdrawn.

The applicants' amendments has necessitated a new grounds for rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

I Avnur et al. (U.S. Patent No. 6,201,109) discloses that sodium hydroxide is a detergent to an ordinarily skilled artisan (column 6, lines 50-55).

II Yamada (Japanese Patent No. JP409041220 A) discloses that NaOH is a biodegradable detergent (abstract).

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCJ

GLADYS JP CORCORAN
SUPERVISORY PATENT EXAMINER